

MARINE REVIEW.

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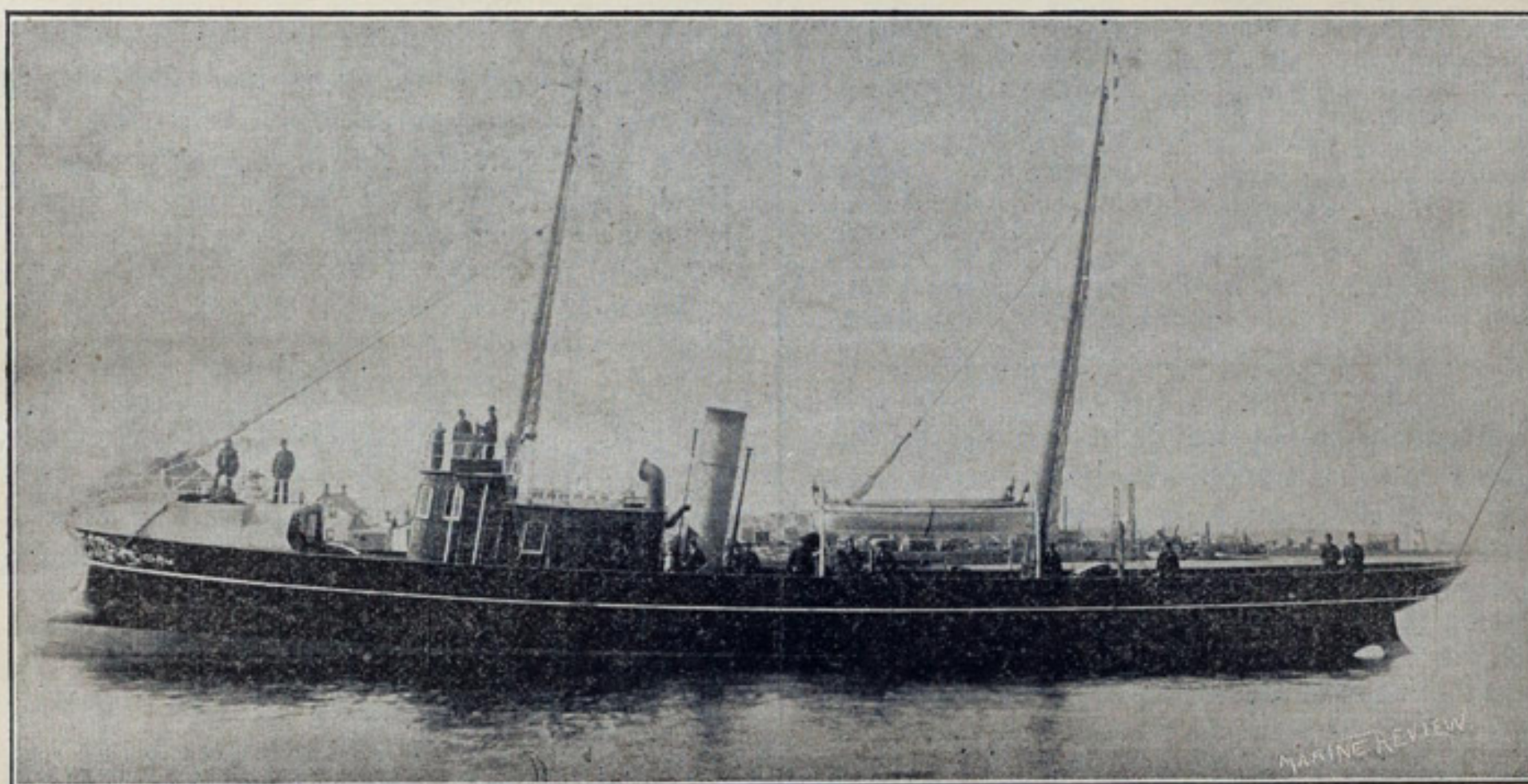
The Canadian Revenue Cutter Constance.

The illustration on this page shows the very handsome little revenue cutter Constance, built last winter by the Polson Iron Works Company, Ltd., at Owen Sound, Ont., for the Canadian government, and about which there has recently been a great hubbub in Washington. The Constance and sister ships are far superior to the boats maintained on the lakes by the United States government.

The D. S. S. Constance has the following dimensions: Length over all, 125 feet; length on water line, 114 feet 6 inches; beam, 19 feet 6 inches; depth of hold, 11 feet 3 inches; draft, 9 feet 6 inches. The frame is of steel and extra heavy, with steel plating for the topsides. The bottom is of rock elm from the turn of the bilge to the keel. The frames are reinforced with "Z" bars from the bilge up, so as to bring the steel plating flush with the wood planking. On the main deck the deck house and engine coamings, etc., are all of steel, as well as the protected turtle deck forward. Accommodations for officers and crew are all arranged between decks, in which the spaces are di-

gross tons; area of immersed amidship section, 126.5 square feet; tons per inch of immersion at 1. w. l., 3.6 gross tons; coefficient of fineness of 1. w. l., .73; displacement, .45; mid section, .8; mean coefficient of fineness of water lines, .6. The official speed over a measured mile at Owen Sound, was 11.67 knots, or 13.44 statute miles per hour. The particulars of elements of design was furnished by Mr. E. Trist, who designed the Constance.

One feature of the construction of this vessel is a novelty in our fresh water designs, and is taken from the plans usually followed in the British navy. The ram bow is a formidable weapon, and in the Constance it is constructed with a view to severe service. The stem forging is very heavy and is reinforced by heavy plates and angles, making it almost solid for some 7 or 8 feet back. Since building the Constance the Polson company has built a sister ship named the Curlew, now in service on the Nova Scotia fishing grounds, and are at work on a third of similar design for Georgian bay service. The Constance is at present engaged in the international revenue service on the lower St. Lawrence.



FLAG SHIP OF CANADA'S NAVY.

vided by four steel bulkheads. The coal bunkers are of sixty tons capacity and are carried along the sides so as to protect both boiler and engines. The engines are inverted compound condensing, with high pressure cylinder 18 inches bore, low pressure 36 inches, the stroke being 24 inches. It is fitted with steam reversing gear and full equipment of bilge and feed pumps. The condenser is of the surface condensing type, having 650 brass tubes with circulating pump attached, the case of the condenser forming part of the engine frame. The boiler is of the Clyde type, 10 feet 6 inches in diameter by 10 feet in length, and carries a working pressure of 115 pounds of steam. It has two Fox corrugated furnaces 42 inches diameter. The wheel is 8 feet 4 inches in diameter, with a pitch of 13 feet 3 inches, capable of developing a speed of 16 miles per hour. The Constance has two pole masts raked well aft with four triangular sails. She is equipped with steam capstan and windlass, Martin patent anchors, bridge reply telegraph, etc. She is armed with three quick firing guns, one mounted on the turtle deck forward and one on each side of the quarter deck aft.

The elements of design are: Displacement to 1. w. l. 254.5

A Pneumatic Canal Lock.

Ship canal schemes throughout the country are said to have received impetus from the invention of a new lock by a Chicago mechanical engineer named Ferris. It has been patented in the United States and foreign countries and consists of two balanced pneumatic caissons. The upper one descending and the lower ascending by slight additions of water. The weight is cared for by compressed air furnished by a hydraulic pump, operated by a turbine wheel, run by waste overflow from the lock. By means of this invention no supply is needed as the displaced water is used over and over. It is also said that the company having in contemplation a ship canal to connect Lake Erie, Montreal and New York will make the new lock patent a basis of an immense syndicate. Private corporations, however, need something more than an invention to build a ship canal.

Vessels classed or rated recently by the American Shipmasters' Association in its Record of American and Foreign Shipping: American three-masted schooner R.G. Whilldin, schooners Charles L. Jeffrey and Cora S. McKay, American ship Mindoro, British bark H. B. Cann and Russian bark Alexander II.

Season's Work of Menominee and Mutual Steamers.

At the annual meeting of the Menominee Transit Company and Mutual Transportation Company, owning two lines of steel steamers engaged exclusively in the iron ore trade and managed in the office of M. A. Hanna & Co., Cleveland, detailed statements were made regarding the earnings, etc. The REVIEW was permitted to make the following summary of the work of the boats during the past season:

MENOMINEE TRANSIT COMPANY'S STEAMERS, SEASON OF 1892.

	Norman.	Saxon.	German.	Briton.	Grecian.	Roman.
Number of trips.....	30	34	29	29	34	32
Hours run.....	3,194	3,398	2,916	2,956	3,318	3,303
Miles run.....	37,090	40,855	35,080	37,782	40,972	39,970
Miles per hour.....	11.61	12.02	12.03	12.78	12.34	12.10
Ore carried, gr. tons..	76,226	89,439	77,633	75,170	90,454	85,409
Av. tons ore pr cargo..	2,540	2,630	2,677	2,598	2,660	2,669
Tons fuel, net.....	4,182	4,663	3,879	4,068	4,596	4,385
Fuel av. lbs. per mile..	225	228	221	216	224	219
Lubricants, av. cost per mile.....	13-100 cts.	93-100 cts.	16-100 cts.	94-100 cts.	97-100 cts.	14-100 cts.
Total time handling cargoes and fuel....	76 d. 23h.	77 d. 21h.	70 d. 4 h.	70 d. 20h.	74 d. 11h.	80 d. 16h.
Lost time, repairs, dry dock, etc.....	18 d. 19h.	.....	14 days.	26 days.	.....	.....
Engineers' supplies and repairs, cost....	\$132 75	\$147 43	\$240 41	\$103 75	\$148 95	\$184 75
Lost time, weather....	7 d. 1 h.	3 d. 14h.	5 d. 6 h.	1 d. 12 h.	8 d. 15 h.	5 d. 20 h.

MUTUAL TRANSPORTATION COMPANY'S STRAMERS, SEASON OF 1892.

	Cambria.	Corsica.	Corona.
Number of trips.....	36	39	39
Hours run.....	3,598	3,714	3,829
Miles run.....	43,290	47,099	46,935
Miles run per hour.....	12.03	12.68	12.25
Ore carried, gross tons.....	85,984	102,892	102,533
Ore carried, average tons per cargo...	2,388	2,638	2,629
Fuel, number of tons, net.....	4,481	5,231	5,198
Fuel, average pounds per mile.....	207	222	221
Lubricants, average cost per mile.....	82-100 cts.	69-100 cts.	90-100 cts.
Total time handling cargoes and fuel	59 d. 18 hrs.	59 d. 10 hrs.	59 d. 22 hrs.
Lost time, repairs, dry dock, etc.....	3 days.	.....	.....
Engineers' supplies and repairs, cost..	\$172 03	\$241 58	\$152 36
Lost time, account of weather.....	15 d. 10 hrs.	5 d. 3 hrs.	8 d. 2 hrs.

Against the Elevator Pool—Line Boat Earnings.

Special Correspondence to the MARINE REVIEW.

BUFFALO, N. Y., Jan. 5.—Some recent developments in elevator and canal matters are of interest to the trade. When it was announced lately that about 16,000,000 bushels of grain had been handled by wild elevators, regret was expressed that the Union elevator, which had done a great share of this work, was now in the pool. C. A. Warfield, agent for the Chicago grain house of Bartlett, Frazier & Co., who had handled the Union for them, remarked quietly that it was quite possible he would get another elevator before next season was over. Now it comes out that the canal men are negotiating for the lease or purchase of the Watson elevator, which will put them on their feet again, as they could run it at half rates and make money.

I was sorry to hear from manager Drake of the Lackawanna line and the Kelderhouse syndicate boats that while wild boats made fairly good profits the package freight lines have very little to show for their season's work. This was suspected when the lines were engaged in cutting rates so viciously, but it has not been stated in so many words before that they often earned less than the actual cost of carrying. No improvement is looked for till the rail lines, which make the rates for the lake lines, come to their senses and stop quarreling over freights.

The actual utility of our lake fleet can not be doubted, whatever may be said of the profits. This is best shown by our Minneapolis flour agencies. When the lakes closed they began to order flour down by rail, but some of it has been on the way twenty-five days and nobody knows where it is.

The Union Steamboat Company is deep in preparation for coming law suits. The Conemaugh-New York collision case, after being decided once, has got to be gone over again, and in Chicago this week the damage suits brought by members of the crew injured in the Tioga explosion are expected to come off. Claims for about \$100,000 have been put in, some of them, it is said, by people personating the heirs of those who were killed, but who have no real legal right to appear for them. The Genessee Oil Company is also made a defendant. It is rather curious that the law can make no use of the fact that the company practically confessed judgment by paying the damages sustained by the boat.

Buffalo harbor builders are not a little bit disturbed because Henry K. Gustin of Ann Arbor came down with a bid for the Dunkirk breakwater that knocked them all out. His bid was \$15,101 for an extension of 250 feet. Some

time ago when our bidders went to Fairport for government work the threat was made that if we didn't stay at home somebody would come down and clean us out. Now comes an entirely new man and innocently, as it appears, performs the task.

Secretary Foster Talks of the Ludlow Case.

Special Correspondence to the MARINE REVIEW.

WASHINGTON, D. C., Jan. 5.—At last Col. Ludlow is to have a hearing in the war department. His case with the light-house board has caused Secretary Charles Foster and his assistants nearly, if not quite as much trouble as the administration of the national finances. It threatened to destroy the secretary's political standing and nearly disrupted the light-house board. It also involved a legal construction of the word "some," as applied to a specified number, with the result that the department held that if an act of congress provided for "some thirty-seven lights" at a certain cost, three lights, more or less, might be erected, provided the total expense came within the specified limit of the cost. For six months Col. Ludlow has been fighting vigorously for his reinstatement for the sole purpose of vindication, as he claims, but as it is thought here, for the purpose of rebuking the light-house board. He brought tremendous influence to bear on Secretary Foster, but that official refused to reconsider his action, until Col. Ludlow could sustain his course by the verdict of a court of enquiry, composed of his brother army officers. In speaking of the case, Secretary Foster said he never before had so many of his own personal friends and politicians of his own party arrayed against him, and that he certainly would have gratified them but for the fact that his best judgment satisfied him that they were in the wrong. He, however, made them this concession—that he would reinstate Col. Ludlow provided that officer first secured vindication at the hands of an army court of inquiry, but that otherwise he could not consistently see his way clear to reverse his action.

The outcome of this case will not only be watched with interest by marine people, but by the citizens of the District of Columbia, because Col. Ludlow is well known to them as one of the former commissioners of the district, under a recent administration.

Boilers and Machinery for Lake Michigan Steamers.

Special Correspondence to the MARINE REVIEW.

MONTAGUE, Mich., Jan. 5.—At the Montague Iron Works, Wilson & Hendrie proprietors, the force of workmen has been increased in proportion to a number of contracts closed recently, and with a new electric light plant and other improvements the works present a most active appearance. Among engines and boiles now under contract is one high pressure marine engine, 24 inches bore by 28-inch stroke, with independent condenser, and one marine boiler 9 feet in diameter by 14 feet long, allowed 130 pounds of steam, for a new passenger boat being built by Rogers & Bird of Sangatuck, Mich., for the Holland Steamboat Company of Holland, Mich. This boat will be ready for duty April 15, 1893, and will run between Holland and Chicago. A fore-and-aft compound engine, with cylinders 14 and 28 inches by 20-inch stroke, and a marine boiler 7 feet in diameter by 12 feet long, allowed 130 pounds of steam, will also be built for the new passenger steamer under construction at the yard of the Grand Haven Ship Building Company, Grand Haven, Mich. This steamer is for the Sands & Maxwell Lumber Company, Pentwater, Mich., and will be ready for service April 1, 1893. She will run between Pentwater and Ludington, Mich.

Another contract is for a high pressure marine engine, 20 inches bore by 24-inch stroke, for a tug being built by Burger & Burger of Manitowos, Wis., for Mueller & Rober of Chicago. An upright engine, 12x16 inches, for the Shelby Milling Company of Shelby, Mich., and several boilers for saw mills are included in stationary work under contract at these shops.

Big Dredging Plant.

Special Correspondence to the MARINE REVIEW.

TOLEDO, O., Jan. 5.—George H. Breyman & Brothers have contracted for another big dredge. This will be the third dredge built and owned by this firm, and when it is completed they will have the most complete dredging plant on the lakes. Dredge No. 3 will not be quite as large as No. 2, completed last fall, but will be somewhat larger and more powerful than No. 1. The hull, to be built by A. Gilmore, will be 90 feet long, 32 feet wide, 9 feet deep forward and 8 feet aft. The engines have not yet been decided upon but they will probably be compound and will be built by the Bucyrus Steam Shovel and Dredge Company.

At a meeting of branch No. 37, M. E. B. A., the following officers were elected for 1893: Past president, Frank N. Weis; president, John Marks; vice president, Irving Hone; recording secretary, W. N. Decker; financial and corresponding secretary, E. D. Lock; treasurer, Frank N. Weis; chaplain, Earnest Rowe; conductor, H. C. Crane; door-keeper, James Eaton; trustees, R. Howe, W. N. Decker and John Marks; representative to national convention, W. N. Decker; alternate to national convention, E. D. Lock.

Send 50 cents in stamps to the MARINE REVIEW for 14 phototypes and gravures of lake steamers neatly bound.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company.....	\$100 00	\$.....	\$ 55 00
Champion Iron Company.....	25 00	.....	35 00
Chandler Iron Company.....	25 00	.....	40 00
Jackson Iron Company.....	25 00	.....	.....
Lake Superior Iron Company.....	25 00	.....	.....
Minnesota Iron Company.....	100 00	64 00	68 00
Pittsburgh & Lake Angeline Iron Co....	25 00	.....	135 00
Republic Iron Company.....	25 00	9 50	10 50
Ashland	25 00	.....	.....
Section Thirty-three.....	25 00	.....	4 00
Brotherton.....	25 00	.....	.....
Iron Belt.....	25 00	.....	2 00
Aurora.....	25 00	.....	9 00

Duluth Stock Exchange quotations report sales of Biwabik at \$40, Great Northern at \$10 and Cincinnati at \$2.15 to \$2.25. Following are prices asked for various stocks in Mesaba range companies: Listed stocks—Biwabik, \$45; Cincinnati, \$2.30; Great Northern, \$10.50; Kanawha, \$2.50; Lake Superior, \$3; Little Mesaba, \$5; Mountain Iron, \$101.50; Mesaba Mountain, \$23.50; Shaw, \$2.35; Security Land and Exchange Company, \$20; Washington, \$4. Unlisted stocks—Allegheny, \$1; Aurora, \$1; Buckeye, \$10; Chicago, \$2.50; Charleston, \$1.50; Champion, 65 cents; Detroit, \$1; Dayton, \$1; Great Western, \$4; Homestead, 10 cents; Kentucky, \$1.25; Kakina, \$11; Lackawana, 50 cents; McKinley, \$28.50; Mesabi Chief, \$5.25; McCaskill, 25 cents; Myrna, \$1; Manhattan, \$1; Northern Light, 50 cents; Ohio, \$9; Oneota, \$2; Pennsylvania, 50 cents; Rouchleau, 80 cents; Republic, \$1.25; Red Hematite, 30 cents; Standard Ore Company, \$8; Tonawanda, \$2; Zenith, \$4.50.

Olof Wenstrom of Marquette, mining engineer, has made an examination of the Republic mine, and gives it as his opinion that there is much in store for the company aside from the lenses now being wrought or in sight. The present lowest depth attained in the workings is about 1,000 feet, and he thinks the bottom of the ore basin at this point will not be reached in twice that distance, and by reason of this, other large bodies of ore should be found in ground hitherto unexplored. He advises thorough exploration of the territory under the bottom of the present pits.—Iron Ore, Ishpeming.

Gogebic range shipments during the past season are greater than the shipments from any of the other Lake Superior ranges. The lake movement was as follows: Gogebic, 2,738,358 gross tons; Marquette, 2,383,555 gross tons; Menominee, 2,257,507 gross tons; Vermilion, 1,155,490 gross tons; Mesaba, 4,200 gross tons; total, 8,539,110. Rail shipments will not change the relative position of the different ranges.

After a trial of three months, the Pittsburgh & Lake Angeline Mining Company, operating one of the most profitable mines in the Lake Superior region, has adopted the eight-hour plan. The change is favored by employes as well as employers. Managers of the mine say that during the trial of this system of working the mine the product per man showed a material increase and there was no increase in the cost of securing the ore.

A report from Duluth says that the Great Western Iron Company, owning lands on the Mesaba, has received an offer of 40 cents a ton royalty and \$10,000 advance for a lease of 120 acres in sections 9 and 10, 58-17

A great many attractive and costly calendars have been sent out with the opening of the new year by vessel brokers, insurance agents and manufacturers in the different lake cities, but by far the most elegant is one issued by the Pemberthy Injector Company, Detroit, Mich. Drop a postal card to the Penbertty company asking for one of the calendars and the request will probably be complied with if this notice in the Review is mentioned.

The five masted auxiliary screw ship Maria Rickmers, which was built last year at Port Glasgow, Scotland, and illustrated in the REVIEW, sailed from Saigon on July 14, for Bremen and is now posted at Lloyds as uninsurable. The Rickmers is the largest vessel of her class afloat. Her dimensions are: Length, 375 feet 7 inches; breadth of beam, 48 feet; depth of hold, 25 feet 4 inches. She is fitted with a 160 horse power expansion engine, the diameter of the cylinders being 16, 26 and 42 inches, with 27 inches stroke of piston. Her boiler is allowed a pressure of 160 pounds. She registers 3,822 tons gross and 3,344 tons net.

Changes in Shipping Concerns.

Some changes are announced with the opening of the new year among firms engaged in the shipping business. Mr. A. C. Saunders leaves the firm of M. A. Hanna & Co., Cleveland, one of the largest concerns engaged in the production and sale of iron ore and pig iron. Mr. Saunders has not announced his intentions as to business matters in the future. If he severs entirely his connection with lake interests he will certainly take with him the best wishes of everybody with whom he has had business dealings. Few young men connected with the lake trade are spoken of more favorably than Mr. Arnold Saunders.

Everybody in lake business will learn with great satisfaction of the promotion of W. J. Sandrock to full membership in the insurance firm of Smith, Davis & Co., Buffalo. He is a hard worker, well versed in his calling and an excellent man. The fact that he was made chairman of the Detroit committee for formulating rules for the building of steel vessels, shows the high estimate of his worth.

The firm of Keith & Carr, vessel and insurance agents, Chicago, has been dissolved. J. G. Keith will be joined by Dennis Sullivan, formerly wrecking master for D. Vance & Co., Milwaukee, in a new firm to be known as J. G. Keith & Co. Messrs. Carr and Bliss of the old firm of Keith & Carr will also begin a new business.

Personal Mention.

Samuel Mitchell of Negaunee, who is a part owner and manager of the Jackson and other important Lake Superior mining properties, has just begun to give attention to business after a long siege of illness.

Capt. J. A. Calbick of Burton, Calbick & Cook, Chicago vessel and insurance agents, Capt. James Davidson, West Bay City shipbuilder, and Capt. Inman of the Inman Towing Association, Duluth, were among visitors in Cleveland during the week.

"On a return trip from England some time ago, I had the pleasure of meeting James J. Hill on the voyage," said David Vance in Cleveland the other day, "and I am satisfied that he will carry out plans for a steamship line on the Pacific. He outlined his plans to me in a general way. His lake line of passenger boats will, of course, be a success, as the boats are intended mainly as feeders of the railway now completed to the Pacific."

Commander R. D. Evans, United States navy, recently appointed naval secretary of the light-house board, is receiving a great deal of attention from Washington correspondents. A recent issue of the New York Herald contained a two-column article on "Fighting Bob Evans' Magnificent Record," and other newspapers throughout the country have printed lengthy interviews with the commander since his arrival at the capital. It is to be hoped that the influence of this new naval secretary with such an excellent record will tend to bring about a better feeling on the lakes toward the executive officers of the light-house service.

Steel Castings.

Commodore Melville, chief engineer of the navy, again refers in his annual report to the department's experience with manufacturers of steel castings. "I am glad to be able to report," he says, "that we are now having less trouble in obtaining steel castings, showing that considerable experience has been gained and progress made in this art since we first began trying to get such work done for our new engines. That there is still room for improvement is shown, however, by the following experience: The bureau recently sent two designs for engine columns—one a modified form of box girder, the other a form of I beam—to four of the most prominent steel casting establishments in the country, asking which of the two forms was regarded as the simpler to cast. One firm reported that it could cast either without difficulty; another said that it could cast the I beam, but that the girder was impossible; the third firm offered to make the girder, but not the I beam, saying that the latter was a form that no one could make, while the fourth establishment claimed that both forms were impossible to cast in steel."

ST. MARY'S RIVER CHARTS NOS. 1 AND 2 FROM POINT IROQUOIS TO E. NEEBISH AND FROM MUD LAKE ENTRANCE TO E. NEEBISH, CORRECTED TO AUG. 30, 1892, CAN BE HAD AT THE OFFICE OF THE MARINE REVIEW, 516 PERRY-PAYNE BUILDING, CLEVELAND, FOR 20 CENTS EACH, OR BOTH BY MAIL FOR 50 CENTS. BOTH CHARTS WILL BE FURNISHED WITH CLOTH BACKS AND BOUND EDGES FOR \$1.

Meager Knowledge Regarding Screw Propellers.

One of the editorial writers of the Engineering Magazine says in the January number: "Considering how long and extensively the screw propeller has been employed for marine propulsion, it might, at first thought, seem remarkable that so little is known of the precise nature of its action under water; but when the difficulty (not to say impossibility) of actual observation is taken into account, it is not so much to be wondered at. No theory of propeller action has yet been framed that can be relied upon as taking fully into account all the conditions dependent upon various forms of hulls, rates of speed, and position with reference to the hulls of vessels; and it is a well-known fact that, to get the best results from engines of a given power, it is frequently necessary to try one propeller after another until the one best fitted for use with a particular ship is found by actual experiment—examples of cases where mere theorizing utterly fails to guide selection. So we are still in the dark upon the subject, and though, doubtless, gaining a little light as time progresses, it is likely to be some time yet before a screw propeller can be selected in advance for a particular ship, with the certainty that it will prove the best possible when the trial trip is made.

"Of screw-propellers something has been printed editorially in the Engineer (London) recently. The topic is the limits of improvement yet possible in screw-propellers. It is obvious that no form of propeller-blade or modification of the boss to which these blades are attached—no reduction or increase of the number or particular arrangement of the blades—can enable a screw-propeller to develop, even theoretically, a mechanical power in thrust any greater than that developed by the engines that drive it. Practically every one admits that the power of the thrust in foot-pounds must be less than the power developed by the motors, by the total power expended in overcoming passive resistances. How much less is it in present practice? The editorial referred to makes the point that the limit of improvement must lie within the present margin of loss of power as developed in thrust, and the unavoidable loss in engine friction that experience and skill has not been able to reduce below from 10 to 12 per cent. We may, therefore, place the theoretical limit of the power possible to be represented by the thrust of the propeller, or, more appropriately speaking, the net work applied by the screw to actual propulsion, as about 88 per cent. of the power developed by the engines driving it. Now, upon this point the Engineer asserts: 'It may be taken as proved that about 80 per cent. of the quality of a screw is fixed by blade area, so that, given blade area enough and regarding 100 as representing perfection, the worst screw it is possible to make will not be 20 per cent. worse than the best.' Here then, if the proposition made be accepted as true, we have the limits between present practice and theoretical possibility cut down to 20 per cent. of the total theoretical possibility. It is to be doubted whether all marine engineers, or perhaps a majority of them, will accept the proposition without challenge. It is certain that in practice there are anomalous peculiarities in the action of propellers. For instance, on one of the English warships a great variety of propellers were tried before the propulsive power developed could be made satisfactorily commensurate with the power of her engines; and when this result, after tedious experiment and much expense, was at last secured, no one could say with certainty why the successful screw was more efficient than others that were tried and found wanting. The Engineer, in the course of its long argument, quotes from text-books that 'the efficiency of the propeller is 50 or 60 per cent.' and upon this remarks that 'unless very serious mistakes are to be risked, it is necessary that in all cases the sense in which the word efficiency is employed shall be very sharply defined'

"Mr. Isherwood's definition (thrust multiplied into speed of the ship and compared with the indicated horse-power) it thinks misleading to the last degree; however, it admits that 'no one seems able to devise a better measure of efficiency,' all of which is confirmatory of the meager knowledge of the exact nature of the action of a screw in a fluid medium.'

Admiralty Docket at Detroit.

Judge Swan of the United States district court, Detroit, has made the following assignment for hearing of admiralty cases:

Friday, January 6, 1893—4058, Stephen B. Grummond vs.

steam barge Isabella J. Boyce; 4156, Albert Forest vs. Benjamin Boutell and Peter C. Smith.

Tuesday, January 10—3771, Henry and Frederick White vs. steam barge Laketon; 3849, Chickory Connelley and another vs. schooner Aloha; 3858, Daniel L. Runnels and another vs. schooner James E. Gilmore; 3908, Stephen B. Grummond vs. schooner Mineral State.

Wednesday, January 11—3909, Stephen B. Grummond vs. schooner E. R. Williams; 3914, Ella Bowers vs. schooner Lone Star; 3936, Capel R. Emery vs. tug Gracie A. Ruelle.

Thursday, January 12—3944, Ellen Craig vs. schooner J. F. Card; 3973, James Henry Goodwin vs. tugs Runnels and Kittie Haight; 3975, John Mullerweiss, Jr., vs. pile driver E. O. A.

Friday, January 13—3743, Henry N. Land vs. steamer Frontenac; 4009, Annie Sullivan vs. Edward Gilmore, et al; 4019, William Baxter vs. barge Sweepstakes.

Saturday, January 14—4024, John F. Eddy et al vs. schooner Pelican; 4039, Benjamin Boutelle et al vs. Carl Heavenrich; 4045, the Boy Line & Fire Boat Company vs. barge Ida Corning; 4090, Gus Gravell vs. barge Bottsford.

Monday, Jan. 16—4044, the Gratwick, Smith & Fryer Lumber Company et al vs. schooner D. P. Dobbins; 4046, Emil Girard vs. schooner Republic.

Tuesday, January 17—4047, Loveland Transportation Company vs. propeller John M. Nicoll; 4055, Decatur B. Millen et al vs. Eureka Fire and Marine Insurance Company; 4064, Osias W. Shipman vs. tug Gordon Beebe; 4097, Frank J. Willette, administrator, vs. propeller John M. Nicoll.

Wednesday, January 18—4068, John E. Pickette vs. schooner Senator Blood; 4070, United States vs. 1,150½ pounds celluloid; 4087, Gillette Surles vs. steam barge Maud Preston.

Thursday, January 19—4092, Peter Kerwin vs. scow Louise; 4094, Farwell Transportation Company et al vs. Union Marine Insurance Company; 4125, James Carroll vs. propeller F. & P. M. No. 2.

Friday, January 20—4145, Hollister Transportation Company vs. 500,000 feet pine lumber; 4148, United States vs. two trunks and two valises containing opium.

Saturday, January 21—4149, Charles H. Weeks vs. propeller Toledo; 4155, Union Dry Dock Company et al vs. tug Sea Gull.

Tuesday, January 24—4023, the Interlake Transportation Company vs. steamer Brazil.

Wednesday, January 25—4085, Andrew St. Martin et al vs. propeller Henry F. Packer; 4098, John Stevenson vs. 333½ and 323 cords cedar; 4103, Andrew J. Wilson vs. steamer A. J. Wright.

Thursday, January 26—4118, Carlos Libert vs. Eureka Fire & Marine Insurance Company; 4121, Delos E. Rice et al vs. steam yacht Countess; 4122, Charles Towse et al vs. barge S. A. Irish.

Friday, January 27—4135, Sarah E. Dunford et al vs. schooner Mary; 4136, Thompson W. Thompson, administrator, vs. Detroit & Cleveland Steam Navigation Company; 4140, Timothy Hurley et al vs. steamer City of Mackinaw; 4146, Mary A. Hurley, administratrix, vs. Detroit & Cleveland Steam Navigation Company.

Saturday, January 28—4062, Thomas Dunford et al vs. schooner Hunter Savidge; 4163, Charles E. Eastman et al vs. propeller Pasadena.

Tuesday, January 31—4179, Timothy L. Churchell et al vs. steamer F. W. Wheeler and Barge Ashland; 4134, F. W. Gilchrist et al vs. steamers Fontana and Caliyuga; 3967, Cooley vs. barge Magnet.

Wheat and Corn in Store at Lake Ports.

The following table, prepared from reports of the Chicago board of trade, shows the stocks of wheat and corn in store at the principle points of accumulation on the lakes on Dec. 31, 1892:

	Wheat, bu.	Corn, bu.
Chicago.....	11,750,000	5,048,000
Duluth.....	14,435,000	.....
Milwaukee.....	2,278,000	31,000
Detroit.....	1,746,000	34,000
Toledo.....	3,594,000	669,000
Buffalo.....	4,261,000	160,000
Total.....	38,064,000	5,942,000

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 13 Western Union Building, CHICAGO, ILL., Jan. 5.

When 1892 came to a close the Chicago custom house had its statistics ready to hand out. Collector Clark and his force are entitled to great credit for the promptness of their work, which became doubly valuable on account of this very promptness. Little of the statistics was published in Chicago papers. The REVIEW gives some important facts from the compilation.

During 1892 there were received at Chicago 6,686,373 packages of merchandise, 1,443,104 M feet lumber, 2,089,347 railroad ties and 1,336,882 tons of anthracite coal. There was shipped during the same time from Chicago 2,457,844 barrels flour, 1,913,091 packages of merchandise, 91,751 sacks of grass seed and 5,718,916 bushels of flax seed. These figures only give information for a few of the more important commodities, the report being received too late for complete condensation. During the season 91,084,042 bushels of grain of all kinds were shipped from Chicago, being divided as follows: Wheat 29,504,990 bushels, corn 41,246,948 bushels, oats, 18,392,274 bushels, rye 595,051 bushels and barley 1,344,779 bushels. In the district of Chicago, including Chicago, South Chicago and Michigan City, there were 10,556 arrivals of vessels having a tonnage of 5,996,626 tons, and the clearances from the district numbered 10,567, the tonnage amounting to 5,968,337 tons. From South Chicago 3,392,713 bushels of grain of different kinds were shipped, and 1,333,119 tons of iron ore and 122,900 tons of anthracite coal were received. These articles are also given as they represent the more important traffic of the port.

C. A. Macdonald, the underwriter, is in New York, and is said to be negotiating with the American Shipmasters' Association to inspect and classify lake boats for the underwriters. It is reported that the association has offered to do the work for \$12,000. It is stated that the last Inland Lloyds has been printed. One underwriter, however, said Tuesday, "Don't go too fast. Everything may be straightened out yet."

The steambarge D. W. Powers left for Sheboygan Wednesday in tow of the tug Welcome. The Powers was bought last fall by the Shores Lumber Company of Ashland. She is now to be thoroughly overhauled and partially rebuilt. Little repair work is being done here, but the yards at Milwaukee, Sheboygan and Manitowoc, are reported to be full of work.

Engineering Congress at the World's Fair.

As announced a short time ago, Commodore George W. Melville, engineer-in-chief of the navy, who is secretary of the division of marine and naval engineering of the World's Fair Congress, has already begun the work of securing papers and making other arrangements for this branch of the congress. This, is, however, only one of seven divisions of the great educational gathering to take place in Chicago this year from Monday, July 31, to Saturday, August 5.

With the aid of the more important engineering societies of America, a strong committee has been formed for the purpose of making all the necessary arrangements, and it is intended to secure papers from leading engineers on their special branches of engineering science. It is intended, as far as possible, to have the papers printed early, so that copies can be obtained, though not for publication, by those desiring to take part in the discussions which are to be held on the papers. The latter are to be read in abstract only, which will save valuable time for the discussions. Papers on new and important constructions, machines and processes, experiments and investigations, will be welcomed from all, but such papers will only be accepted for reading on the advice of the officers in charge of the arrangements for that particular division of engineering to which the paper relates. All the papers will be published in English; those in other languages, if accepted, will be translated, but discussions may be in French, Spanish or German, as well as in English, interpreters being provided when necessary. Formal invitations to participate in the congress will be issued to all the leading engineers of the world. The entire proceedings of the congress will be published, and copies sold at cost price to engineers who may subscribe for them. At the close of the congress a number of excursions will be made to points of engineering interest, the details of which have not yet been settled. To facilitate the work, the congress has been divided into seven divisions. The names of the secretaries of these divisions are given below, and to them all inquiries, etc., should be addressed: Division A, civil engineering, Secretary Mr. F. Collingwood, 127 East Twenty-third street, New York; division B, mechanical engineering, Secretary Mr. F. R. Hutton, 12 West Thirty-first street, New York; divisions C and D, mining and metallurgical engineering, Secretary R. W. Raymond, 13 Burling Slip, New York; division E, engineering education, Secretary I. O. Baker, University of Illinois, Champaign, Ill.; division F, military engineering, Secretary Clifton Comly, Governor's Island, New York harbor; division G, marine and naval engineering, Secretary G. W. Melville, engineer-in-chief, United States Navy, Washington, D. C.

Powerful Fire Boat.

Baltimore has a fire boat fitted with tubulous boilers, fire pumps of special design and other improved equipment. Eastern marine exchanges tell of the wonderful performance of the boat at the big cotton fire in that city a short time ago. The walls of the warehouse where the fire broke out were from 18 to 23 inches thick, and, as all shutters and doors were of iron, the boat absolutely knocked a hole through the solid masonry some 5 or 6 feet wide by ten or twelve feet deep, then maintaining constant streams for more than fifty hours upon the apparently inextinguishable mass. The boat's hull, machinery and engines were constructed in Baltimore, her fire pumps by Thos. Manning, Jr., & Co. of Cleveland and her boilers by the Cowles Engineering Company, South Brooklyn. She has two of the Cowles water tube boilers, and was designed and superintended in her construction by Wm. Cowles, constructing engineer and naval architect and president of the Cowles Engineering Company, who has received very complimentary letters in regard to her performance on this occasion.

Cleveland builders of the pumps are further complimented by the following letter:

MARYLAND CLUB.

Baltimore, Md., January 2, 1893.

My Dear Mr. Manning: I feel that I owe you an apology for not writing to you sooner, and telling you of the magnificent results we obtained from your pumps at a large cotton fire here recently. Captain Lindsay tells me he has written to you, and has given you the figures, so that it is not necessary for me to go into details, but it gives me great pleasure to add, on the part of the commissioners, that nothing could have been more satisfactory than the action of the pumps you built for us. The continuous service of 158 hours is, in our opinion, as severe a test as can be made. The pumps show, up to the present time, no distress whatever, and it is most gratifying to me to be able to assure you that we are more than satisfied with them.

I remain, yours sincerely,

GEORGE MAY, Commissioner.

More Work for Wheeler.

The closing of three new contracts by F. W. Wheeler & Co., West Bay City, Mich., gives that yard more work than any other on the lakes. The contract with John Francombe and others of Detroit is for 190-foot schooner, 34 feet beam and 14 feet deep, to tow with the steamer Stafford. The second contract is for a schooner 250 feet long, 41 feet beam and 18 feet deep and is for Capt. Wm. Forbes, of Port Huron, Mich. She will have four spars and full rig. This contract knocks out the statement that no more craft of that class would be built on the lakes. The third contract is for a Saginaw river fire tug, 60 feet long, to take the place of the one at present in that service.

In General.

One of the two new cargo-carrying 9,000-ton steamers for the Inman Line will be built by Messrs. W. Denny & Bros., Dumbarton, and the other by Messrs. G. & J. Thompson, Clydebank. Contracts have also been placed with another Clyde firm for two steamers of 8,000 tons each, intended for trading purposes between Liverpool and Philadelphia.

One of the original iron steamboats, the Richard Stockton, built by the Harlan & Hollingsworth Company forty-one years ago, is still doing good service. At least four American wooden ships might be named which have been in the trade about half a century, including the Columbia, formerly of the Black Ball Line to Europe, which was built by William H. Webb in 1841.

The advantage of twin screws for steamers are so many and so manifest that they promise to supercede the single screw entirely. The cost is so much greater just now that only the finer class of boats will be fitted with twin screws, but the difference in cost will be somewhat lessened in time, and the saving gained in the end will far more than equalize any addition of expense.—Maritime Register.

We are glad to see that the question between Col. Ludlow, corps of engineers, and the light-house board, is to be submitted to a court of inquiry. We do not doubt that the result will be favorable to Col. Ludlow. His restoration to duty in his old position may or may not follow, but this is of less consequence than that he should be relieved of the charge of insubordination brought against him by some members of the light-house board.—Army and Navy Journal.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }
HOMER J. CARR, ... Associate Editor and Manager Chicago Office,
Western Union Building, 110 LaSalle Street.

Published every Thursday at No. 516 Perry-Payne Building, Cleveland, O.

The books of the United States treasury department contain the names of 3,600 vessels, measuring 1,154,870.38 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The number of vessels of 1,000 to 2,500 tons on the lakes on June 30, 1891, was 310 and their aggregate gross tonnage 512,787.58; in all other parts of the country the number of this class of vessels was, on the same date, 213 and their gross tonnage 319,750.84. The classification of the entire lake fleet is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,592	756,751.53
Sailing vessels.....	1,243	325,131.06
Canal boats.....	703	72,515.42
Barges.....	62	20,472.37

Total..... 3,600 1,154,870.38

Tonnage built on the lakes during the past five years, according to the reports of the United States commissioner of navigation, is as follows:

	No. of boats.	Net Tonnage.
1887.....	152	56,488.32
1888.....	222	101,102.87
1889.....	225	107,080.30
1890.....	218	108,515.00
1891.....	204	111,856.45

Total..... 1,021 485,042.94

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 228 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014. Number of boats through St. Mary's Falls canal in 1891, 225 days of navigation, 10,191; tonnage, net registered, 8,400,685. Number of boats through Suez canal during 1891, full year, 4,207; tonnage, net registered, 8,698,777.

Entered at Cleveland Post Office as Second-class Mail Matter.

IT IS now the earnest hope of everybody connected with the lake marine that the war department inquiry in the case of Col. Ludlow with the light-house board will at least result in a complete vindication for Col. Ludlow, and with him Commander Heyerman, in the matter of lighting St. Mary's river. Washington correspondence, in almost every direction is, however, being worked in the interest of the treasury department. It of course, imposes additional hardship on Col. Ludlow, but no doubt, is but temporary in character. It is to be regretted that certain newspapers have even given a semi-support to Prof. Mendenhall, whose pamphlet can not be justified in its personal hostility and looseness of statement upon any ground of propriety or equity. He abandoned altogether his pretense of impartiality, and sought to shift the reasons for the relief of the district officers from the St. Mary's river to trivial prior matters which were in themselves of no consequence, and with which Commander Heyerman had nothing whatever to do. Furthermore, the paper itself has no official status or validity. It does not proceed from, nor was it in any sense authorized by the board, but is in the nature of a personal report or statement from Prof. Mendenhall to Secretary Foster. There will be no difficulty in exposing these features of the pamphlet to the court, and Col. Ludlow's friends feel entirely confident that he will secure a vindication, although the task of getting a full understanding of the somewhat complicated situation into the minds of three men unfamiliar with the locality, or with the light-house service, can not be considered an entirely simple affair. Now, more than ever, the vessel men and vessel interests, who have so generally supported Col. Ludlow, should continue to do so, and rely on the individual integrity and impartiality of the court as to the outcome.

ALTHOUGH the proposal of the William Cramp & Sons Ship and Engine Building Company, Philadelphia, was in the aggregate \$204,000 lower than that of the Union Iron Works, San

Francisco, on the battle ship and cruiser, for which the navy department opened bids several days ago, a potential Pacific slope influence is at work to secure one of the ships for the San Francisco company. The Union Iron Works is deserving of encouragement, but not to the extent of thousands of dollars of the people's money. Laying aside the legal question involved in giving the contract for one of these ships to the Pacific coast works, the injustice that would be done the Cramps by such action is a most serious matter, and the far-reaching results of establishing such a bad precedent can not well be imagined.

REPORTS from Pittsburg about the formation of two big companies to compete with the Carnegie Company, through the consolidation of the furnaces and iron mills of Pittsburg and the Mahoning valley of Ohio, may have no foundation in fact, but it is nevertheless certain that the conditions which prompt these reports mean a great deal to workmen in the iron industry. Through the Homestead affair, high-priced labor will be made a thing of the past, and iron manufacturers in all parts of the country must meet reduced prices. With vast areas of newly discovered iron lands in the Lake Superior region and a forced reduction in the cost of manufacture, it would seem that the effects of a low tariff on iron will be discounted by a change in home conditions before the new free trade administration attempts to carry out its promises.

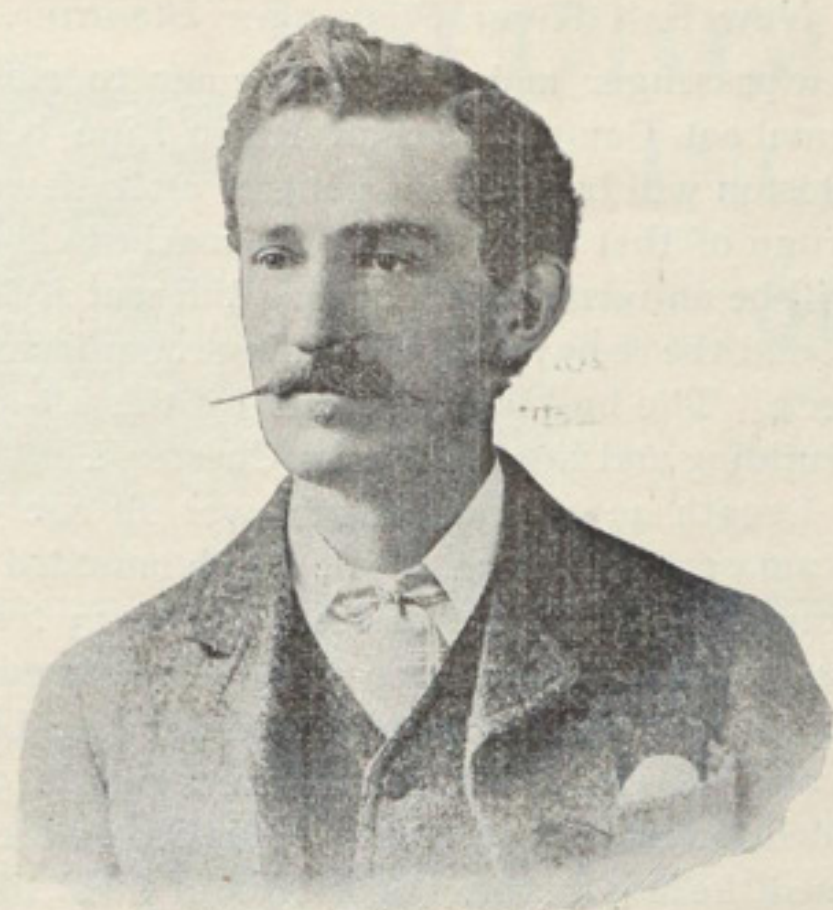
THE bill which it was said was killed in the House of Representatives a few days ago through influence of the American Steel Barge Company proposed to revive and continue patents granted in October, 1858, to Ross Winans of Baltimore, covering vessels similar to the the present type of whaleback. It would seem as though congress was entirely right in refusing to take up such a measure, as the patents, even if they covered such a craft as the McDougall whaleback, had expired years ago. Whatever may be said as to Capt. McDougall's rights in the matter of patents, his success in securing capital for the practical development of the whaleback must be admired.

VESSEL owners and masters on the lakes are greatly indebted to Commander Nicoll Ludlow, recently relieved from the duties of light-house inspector on Lake Michigan, for his successful endeavors to make navigation safe during the closing days of the past season. The light ships in the Straits were not removed until Dec. 12 to 15, and buoys and all other aids were also kept in service to the latest time possible. It is certainly unfortunate that the navy department refused to consider the earnest request of the vessel owners that the time of service of this most capable officer be extended.

NO COUNTRY in the world has a better lighthouse or life-saving service than the United States. Safety to life and property is the prime object sought in the expenditure of large sums of money annually for the maintenance of these branches of the government. The small extra cost of making telegraphic communication between light-houses, light-ships and shore stations would be very light in view of the additional benefits to be secured. Great Britain and other countries are preparing for a telegraphic system of this kind.

OHIO newspapers are still talking of progress in the scheme for a pool among Hocking Valley coal producers, and a combination among Ohio coal railways is also talked of. This latter is not worthy of consideration, as conditions surrounding the railways would not permit of such action, but it is to be hoped that the coal producers will be able to come to some understanding whereby they can secure a fair profit in business. They have been working for nothing long enough.

Capt. John Green of Buffalo has gone to California for the winter.



PROF. GEO. R. McDERMOTT, N. A.

Several weeks ago we presented a portrait of Prof. W. F. Durand, principal of the School of Marine Engineering and Naval Architecture, Cornell University, and now through courtesy of the American Shipbuilder is given a likeness of Prof. Geo. R. McDermott, who also is instructor in this school. In 1879 Mr. McDermott entered the drawing offices of J. & G. Thompson, on the Clyde, and in 1883 was made chief of the designing department under Prof. J. H. Biles, who was manager and naval architect. Four years later he was given entire charge of the cost department and had in hand all details from the time of enquiry to the time of delivery of vessels. He was for a short time with the Southampton Naval Works, from which position he was secured by Prof. R. H. Thurston, through Mr. Doran, of the International Line, as instructor in the American college. His experience in construction is varied, as he has designed or assisted in designing everything from a tramp to a greyhound and from a torpedo boat to a battle ship. The Japanese cruiser Chiyada Kan and the Spanish war ship Reina Regente were built under his observation, as were 80 other vessels of every conceivable class and for every service, except lake service. With the peculiarities of the latter practice, he and Mr. Durand expect to make themselves familiar next season, when they will visit lake ship yards and probably make a trip on some of the newly built lake steamers.

Petroleum Tank Steamers.

Until the year 1886 American petroleum was shipped to Europe in sailing vessels, and while on board it was stored in barrels. The usual cargo was from 7,000 to 10,000 barrels, and in a few cases as many as 14,000 barrels were carried at one time. No firm of underwriters would insure a steamer laden with oil in barrels, nor could a crew be found that would risk the danger of being burnt out of their ship. About the year 1880 one of the Baku oil owners organized a fleet of tank steamers to carry oil across the Caspian sea to the mouth of the Volga, but the distance traveled is small, and no rough weather is met with on the Caspian sea. Such craft would not be seaworthy even in the Mediterranean, and are not to be compared with the modern tank steamer. They are only noteworthy on account of their having been the earliest forerunners of the modern system of ocean transport. In the year 1886 Riedemann & Schutte of Bremen first conceived the idea of adapting the tank system to their ocean traffic, and they accordingly fitted out one of their sailing ships with a series of seventy tanks made like horizontal boilers. These tanks were connected together with tubes, and the end ones were left empty to allow for expansion. Their total capacity was 2,000 tons or 13,400 barrels. It was difficult to effect an insurance on this steamer, and harder still to get a crew. Still, at the end of 1886 she sailed away from America for the first time, and after that time she performed several successful voyages, until she was finally wrecked on the British coast. Her success encouraged the owners to continue this method of shipment, but they decided to try steamers instead of sailing ships. Their first steamer was built at Newcastle-on-Tyne, and ever

since the use of tank steamers has increased. At first the tank system had its violent opponents among the workmen here, for the loading and unloading was, of course, done by steam pumps out of and into storage reservoirs instead of by manual labor as heretofore. The seamen also objected on account of the danger from fire, and the Standard Oil Company itself looked askance at it, for the disuse of barrels would throw their cooperage establishment out of work. The Knights of Labor had to be restrained by the police from interfering with the loading of the ships, and it was only with great difficulty that the first cargo was put on board. The new system was worth fighting for, as it enabled the shippers to deliver the oil much more rapidly. The old sailers which carried the oil in barrels used to take 45 days for the voyage from America to Bremen, and 35 days were occupied in the return voyage. Then it took a month to load and another to unload, so that a vessel could only make at the most three round trips a year and deliver 40,000 barrels during that time. A steamer, however, will make the voyage in fourteen to seventeen days, and requires only five days to load and five days to unload, so that it can make seven round trips every year and deliver five times as much oil. In the construction of tank steamers the chief points to be taken care of are to protect the oil from the heat of the furnaces by means of water spaces and to construct the tanks in such a way as to allow for the expansion and contraction of the oil. The latter point has caused the most trouble, for in most of the ships vacant spaces were left to provide for this expansion. These spaces are naturally usually filled with air and petroleum vapor, and many explosions have resulted. The latest arrangement to prevent these disasters is to form the upper part of the tanks in the shape of a hydraulic cylinder, and to allow for expansion and contraction by means of the movable piston whose rod passes through a stuffing box in the top of the tank. Such a construction will probably obviate all the danger that has hitherto been met with in tank steamers.—Engineering and Mining Journal.

Do You Want a Photograph of Your Steamer?

To accommodate subscribers who are anxious to secure photographs of lake steamers in which they are in any way interested the MARINE REVIEW has made a collection and is able to furnish 7x9 photographs, well mounted, of the following steamers at \$1 each. Write to the MARINE REVIEW, 516 Perry-Payne building, Cleveland, O.:

Arabia,	Harlem,	Packer, R. A.,
America,	Helena,	Petoskey,
Averell, W. J.,	Haskell, W. J.,	Peerless,
Avery, Waldo A.,	Hall, John E.,	Parnell, C. S.,
Alaska,	Hudson,	Philadelphia,
Albany,	Hurd, Jos. L.,	Prince, F. H.,
Atlanta,	Italia,	Perrett, J. C.,
Argonaut,	Indiana,	Pathfinder (whaleback),
Boyce, Mary H.,	Ionian,	Panther,
Boscobel,	Juniata,	Pillsbury (engines),
Baldwin, S. C.,	James, H. R.,	Pontiac,
Buffalo,	Jewett, H. J.,	Rochester,
Boston,	Langdon, Jas. R.,	Rosedale,
Bieleman, C. F.,	Lackawanna,	Rugee, John,
City of Duluth,	Louisiana,	Russia,
City of Rome,	Lehigh,	Smith, Gov.,
Caledonia,	Lycoming,	Saranac,
City of Ludington,	Lawrence,	Syracuse,
City of Racine,	Manola,	Susquehanna,
Cayuga,	Maruba,	Seneca,
City of Fremont,	McVittie, A.,	Sachem,
City of Naples,	Masaba,	Smith, Ed.,
Chemung,	Maryland,	Schuykill,
Clarion,	Marina,	St. Lawrence, (do engines)
Conemaugh,	Mather, Sam'l (whaleb'k)	Scranton,
Conestoga,	Maytham, Thos.,	Sheboygan,
Chicago (Goodrich Line),	Manchester,	Shaw, John (schooner),
Chicago (West'n Tr. Co.),	Merrimac,	Tilley, Sir S. L.,
City of Traverse,	Minnesota,	Tacoma,
City of Paris,	Manhattan,	Tuscarora,
Codorus,	Massachusetts,	Thomson, A. D., (whaleb'k)
Donaldson, Jas. P.,	Marshall, Sam'l,	Tioga,
Eddy, John F.,	Mills, Rob't,	Uganda (engines),
Egan, W. M.,	Milwaukee,	Viking,
Eddy, C. A.,	Mahoning,	Virginia,
Fayette,	Neosho,	Vance, F. L.,
Foster, Parks,	New York,	Wheeler, F. W.,
Florida,	Northern King,	Wyoming,
Flower, R. P.,	North Wind,	Williams, George F.,
Gilcher, W. H.,	Owen, J. Emory,	Wisconsin,
Gogebic,	Owego,	Wissahickon,
Grecian,	Owen, Ira H.,	Wilbur, E. P.,
Gladstone,	Onoko,	Westcott, J. W.,
Grover, M. B.,	Portage,	ashburn,
Gilchrist, J. C.,	Palmer, Thos. W.,	



At a regular meeting of the Cleveland branch, Shipmasters' Excelsior Marine Benevolent Association, last week, President Lowe appointed the following officers: Marshal, Capt. William W. Brown; sentinel, Capt. William Cowan; warden, Capt. O. Ohlsen. Delegates to the convention of the general association at Port Huron will be appointed on Friday, Jan. 6.

The McGraw Transportation Company of Bay City has been re-incorporated, and its capital increased to \$300,000. The company is now composed of J. W. McGraw, Thomas Cranage, S. P. Cranage, J. S. McNeil of Bay City, and F. S. McGraw and Edward Smith of Buffalo. The company now owns the City of Paris and the City of Venice, and recently contracted for a steamer on the stocks at Davidson's yard, which is to be named J. W. McGraw.

A Steamboatmen's Protective Association, composed of wheelmen, lookoutmen, watchmen and stewards, has been organized at Chicago with 150 members. This is the initial body of a series of such organizations, one of which will be in each port of the chain of lakes and at each Pacific coast port. The officers elected are: William Gordon, president; Charles Tracy, secretary; James Woods, treasurer; Hugh O'Connor, organizer; William Wesch, Frank Seabright and Otto Van Dall, trustees.

Col. Jared A. Smith, United States engineer at Cleveland, a few days ago opened bids for dredging the straight channel at Sandusky. Five bids were received. The bid of E. B. Seward of Albany, N. Y., was the lowest. The bids were as follows: John Stang, Lorain, 17 $\frac{3}{4}$ cents; L. P. & J. A. Smith, Cleveland, 18 cents; James Rooney, Toledo, 19 cents; Luther E. Allen, Detroit, 19 cents; E. B. Seward, Albany, 11 $\frac{1}{2}$ cents. Seward has never done any work on the lakes, but has done considerable work on the Hudson river. Col. Smith will recommend that the contract be awarded to him.

Capt. William S. Mack and others of Cleveland have bought one of Capt. James Davidson's new schooners. The vessel is a duplicate of the schooner Aberdeen, and was launched late in November. She is 225 feet long, 35 feet beam and 18 feet deep. She has double steel keelsons, and is double corded and strapped. In Inland Lloyds' she is rated at 18*. She can carry 80,000 bushels of wheat from Chicago or 2,200 tons of ore from Escanaba. Her cabins are furnished in hard wood. The new boat will tow behind the steamer V. H. Ketchum, owned by the same parties.

At the annual meeting of the Cleveland branch, Marine Engineers' Beneficial Association, the following officers were elected: Past president, C. M. Stoddard; president, J. B. Wood; vice president, Martin J. Burns; recording secretary, William H. Aikens; corresponding secretary, John N. Kirley; financial secretary, James P. Carr; treasurer, M. B. Sturtevant; conductor, Henry T. McAuley; chaplain, Henry Schaff; door keepers, Charles Steadman and George Masters; trustees, O. N. Steele, J. B. Wood, William Lowe. At the convention of the national association in Chicago, Jan. 23, the Cleveland engineers will be represented by C. M. Stoddard and J. B. Wood.

Trade Notes.

The Foster Engineering Company of Newark, N. J., is getting up a full equipment of its pressure regulators, consisting of twenty-one valves, for the United States armored cruiser Columbia, building by the Cramps. This company has also an order for valves for gunboats Nos. 5 and 6, under construction at the Bath Iron Works, Bath, Maine.

In a circular letter that is a work of art from a typographical view, the Lunkenheimer Brass Manufacturing Company of Cincinnati, announced with the close of the year that an increased demand for its brass and iron specialties necessitated an increase in capital to \$500,000, which will be followed as soon as possible by additional manufacturing facilities. The company is now known as the Lunkenheimer Company, and its officers are President Edmund H. Lunken, Vice President and Treasurer C. T. Lunkenheimer and Secretary D. T. Williams.

New Fall River Passenger Steamer.

The new passenger and freight steamer to run in the Old Colony Steamboat Company's Fall River Line between New York and Boston will be built in general after the style of the famous Puritan of that line. The only marked changes in construction will be an increase in length, a different style of engines and boilers, and the removal of the dining-room from the hold to the main deck. The hull will be built by the Delaware River Iron Ship Building and Engine Works, Chester, Pa. The dimensions are: Length 423.5 feet, length over all 440.5 feet, beam 52.5 feet, beam over guards 92.5 feet, depth moulded lowest part 20.5 feet, draught light will be 12 feet, loaded 13 feet, displacement light 4,550 tons, loaded 5,200 tons. The dimensions of the Puritan after which this boat is to be modeled are: Length 403.3 feet, length over all 419.3 feet, beam over guards 91 feet, and depth moulded lowest part 20.5 feet. This boat, which will probably be named the Mayflower, will be built of steel, like the latest additions to the line, and it is intended to make this excel the others in point of power, speed, capacity and elegance. She is to be built on the double-hull, longitudinal, cellular system, with a length of double bottom of 340 feet, having fifty-two compartments, besides which, the hull is subdivided above the double hull and at ends of vessel by means of bulkheads and flats into nine additional water-tight spaces, making in all sixty-one compartments. The aim is to make her non-destructible, the free-board being sufficient to float her with any ten of the compartments within the double bottom full of water, or with any two of the compartments above the double bottom filled.

The engines for the Mayflower will be built by the W. & A. Fletcher Company, Hoboken, N. J. The change in the style of engine from the compound-beam to compound double-inclined engine is made to increase the stability of the vessel, for while the Puritan cannot be excelled as a comfortable sea boat, it was found that to give the new boat the increased power desired would make the weight of beam and upper part of engine greater than the increase in stability of new hull would safely permit. The double-inclined engine has other advantages for a vessel of this size. It has practically no centers, and the use of an enormous low-pressure cylinder is avoided. The number of cylinders are four, two high-pressure cylinders of 51 inches diameter, and two low-pressure cylinders of 95 inches, both having 132 inches stroke. The indicated horse power is 8,000. The equipment consists of connected air pumps, independent circulating pumps and surface condensers, with cooling surface of 16,000 square feet.

The Mayflower will have ten Scotch single-ended boilers with mean diameter of 14 feet, and length of 14 feet 6 inches. The number of furnaces will be 30, of the corrugated type, with inside diameter, 44 inches; total grate surface, 850 square feet; total heating surface, 24,000 square feet. The boilers will be allowed a working pressure of steam of 150 pounds per square inch, and arranged for natural or forced draft, as may be desired.

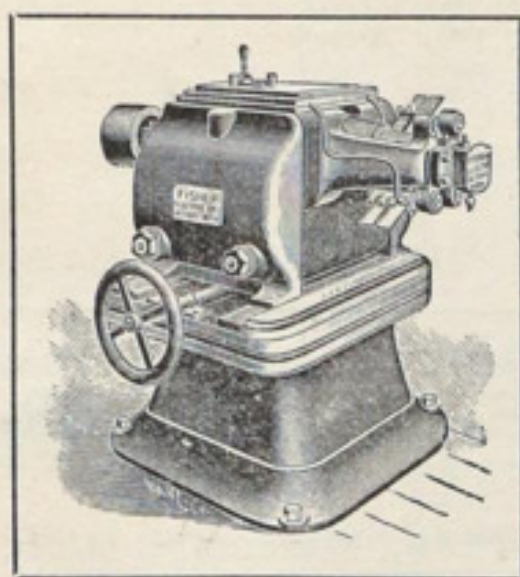
Obituary.

Capt. Richard Powers of Racine, Wis., died recently in Kansas. He was in charge of lake vessels for a number of years.

From Grand Rapids, Mich., the death of Captain William P. Bryan, an old lake navigator, is announced. He was sixty-two years of age.

Captain Lazarus Kenworthy, who had served sixty-three years on water salt and fresh, and who was well known of late years as the keeper of range lights at the head of Russell island, died at Algonac, Mich., last week.

Capt. Joseph Taylor, who was government inspector of steamboats for about twenty years, died of old age, on Friday last, at Kingston, Ont., of which place he had been a resident for forty years. He was engineer for many years in the Richelieu & Ontario Navigation Company before being appointed inspector.



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T. F. NEWMAN, CLEVELAND, O. Gen'l Mgr. Cleveland & Buffalo Transportation Co.	Two Side-wheel Passenger Steamers
J. C. RICKETSON, MILWAUKEE, WIS. General Manager Inter-Ocean Transportation Co.	One Steel Freight Steamer
A. W. COLTON, TOLEDO, O., General Manager Lake Erie Transportation Co.	One Side-wheel Passenger Steamer and four Freight Steamers
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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind or wishing to purchase vessels, are invited to take advantage of the same offer. Employers in need of professional men or men who want positions may avail themselves of the opportunities offered. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 516 Perry-Payne Building, Cleveland, O.

160—WANTED—A second-hand tug engine, compound preferred; size to equal about 24 by 24.

161—FOR SALE—Second hand marine boiler, 8 feet face and 13 feet long, with steam chimney about seven years old, but has been used only a short time and is in good order; built at Washington navy yard and has composition tubes; plates of Otis steel, double riveted nearly all over on external seams; will inspect for 95 pounds.

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165—WANTED—To buy or lease, passenger steamer, about 100 feet long, suitable for coasting trade on Lake Superior.

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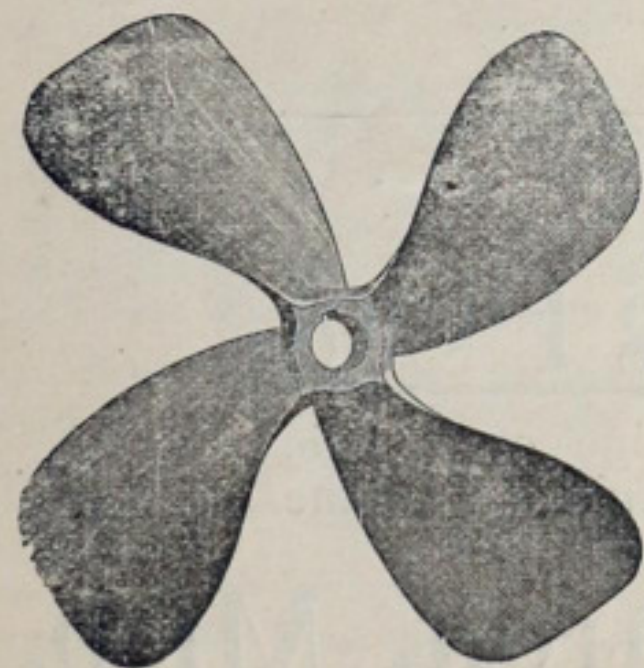
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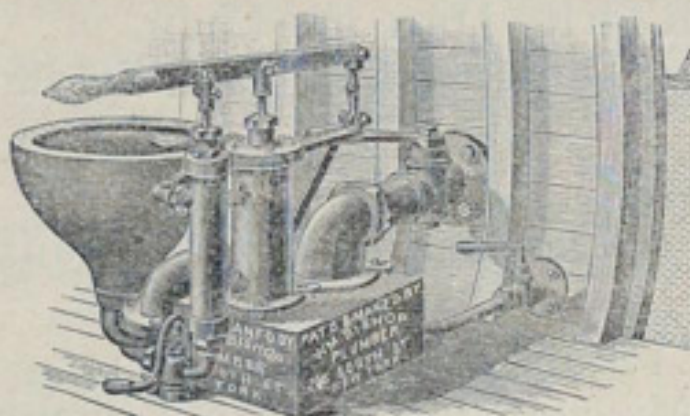
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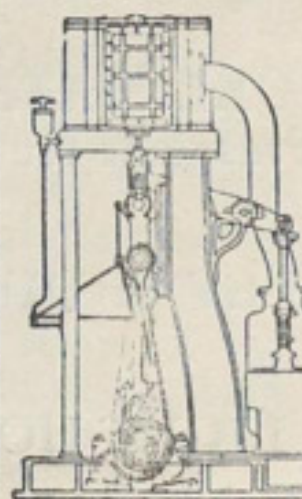
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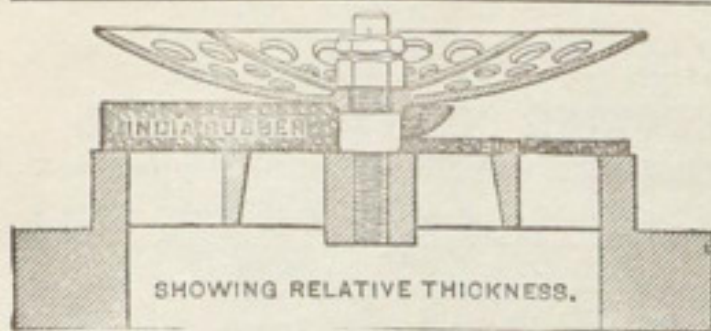
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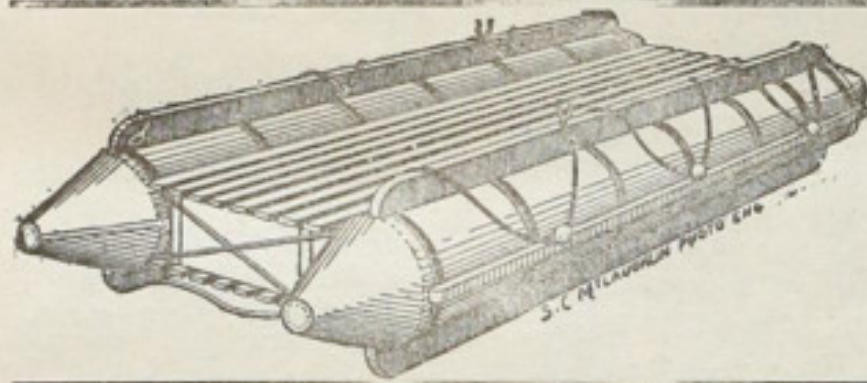
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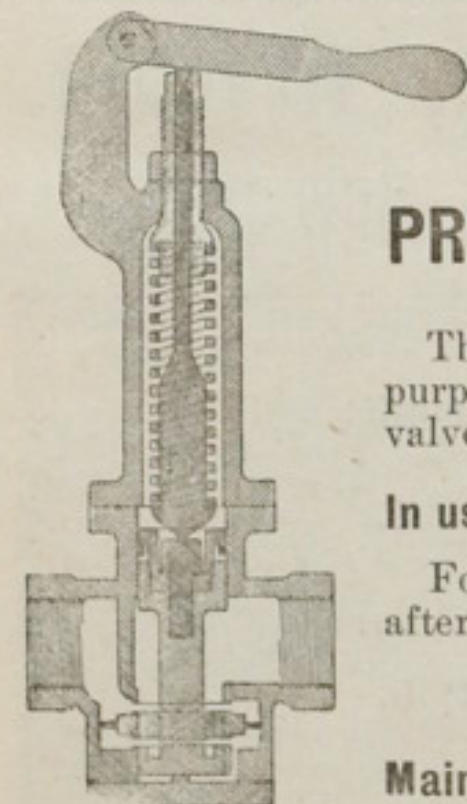
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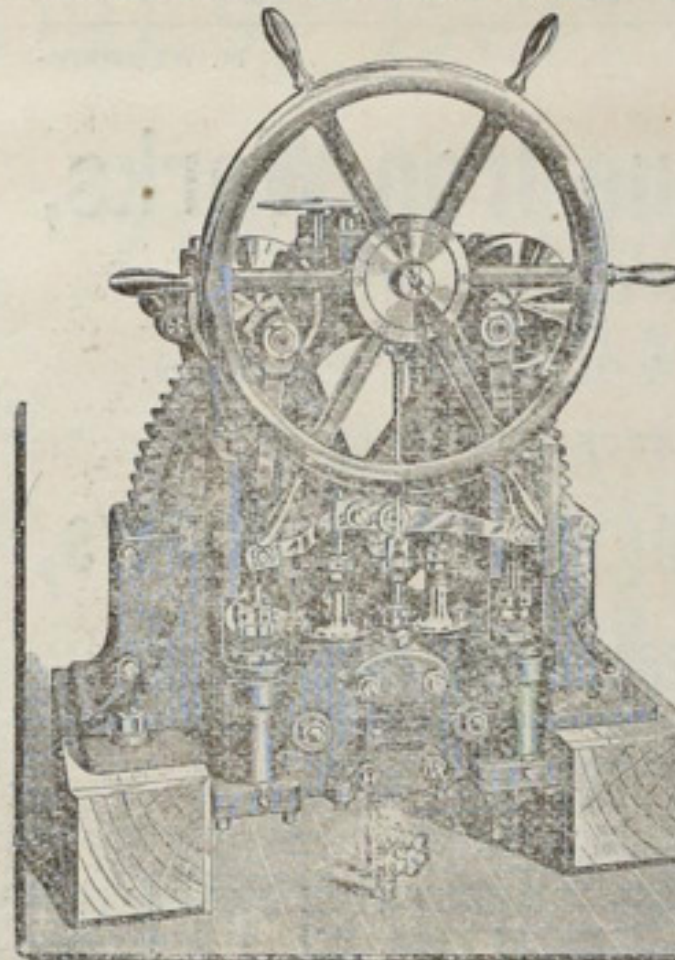
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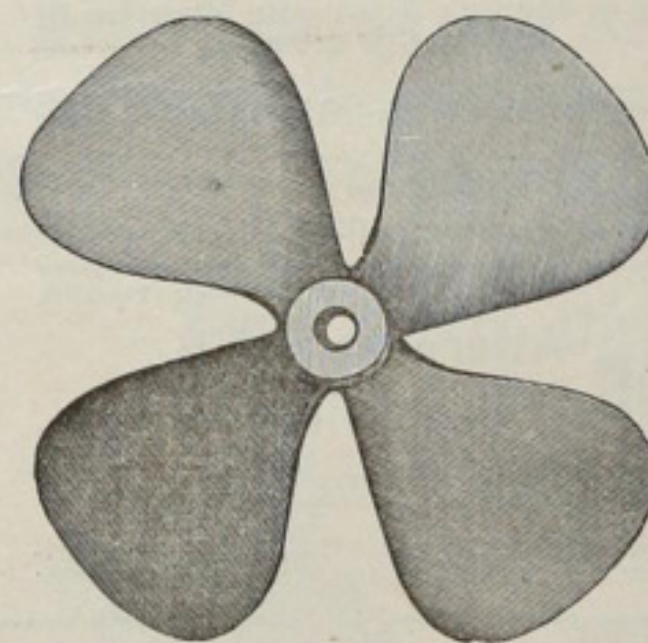
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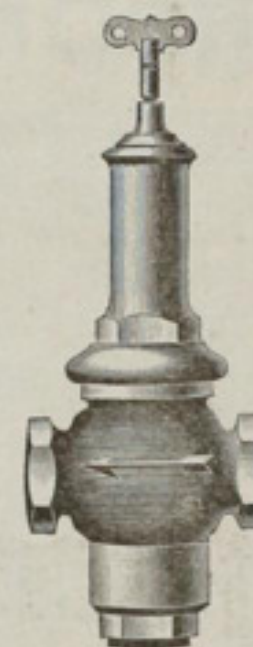
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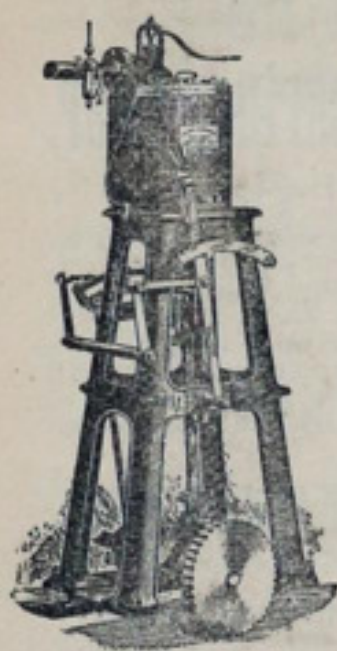
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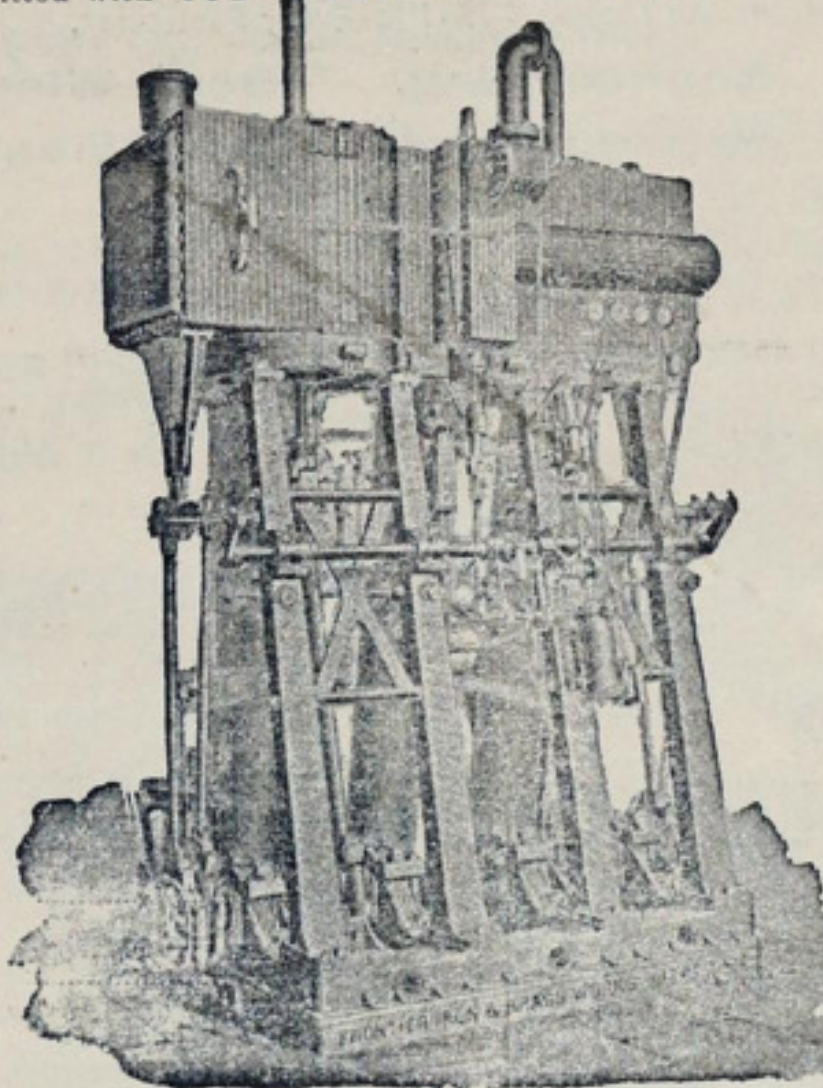
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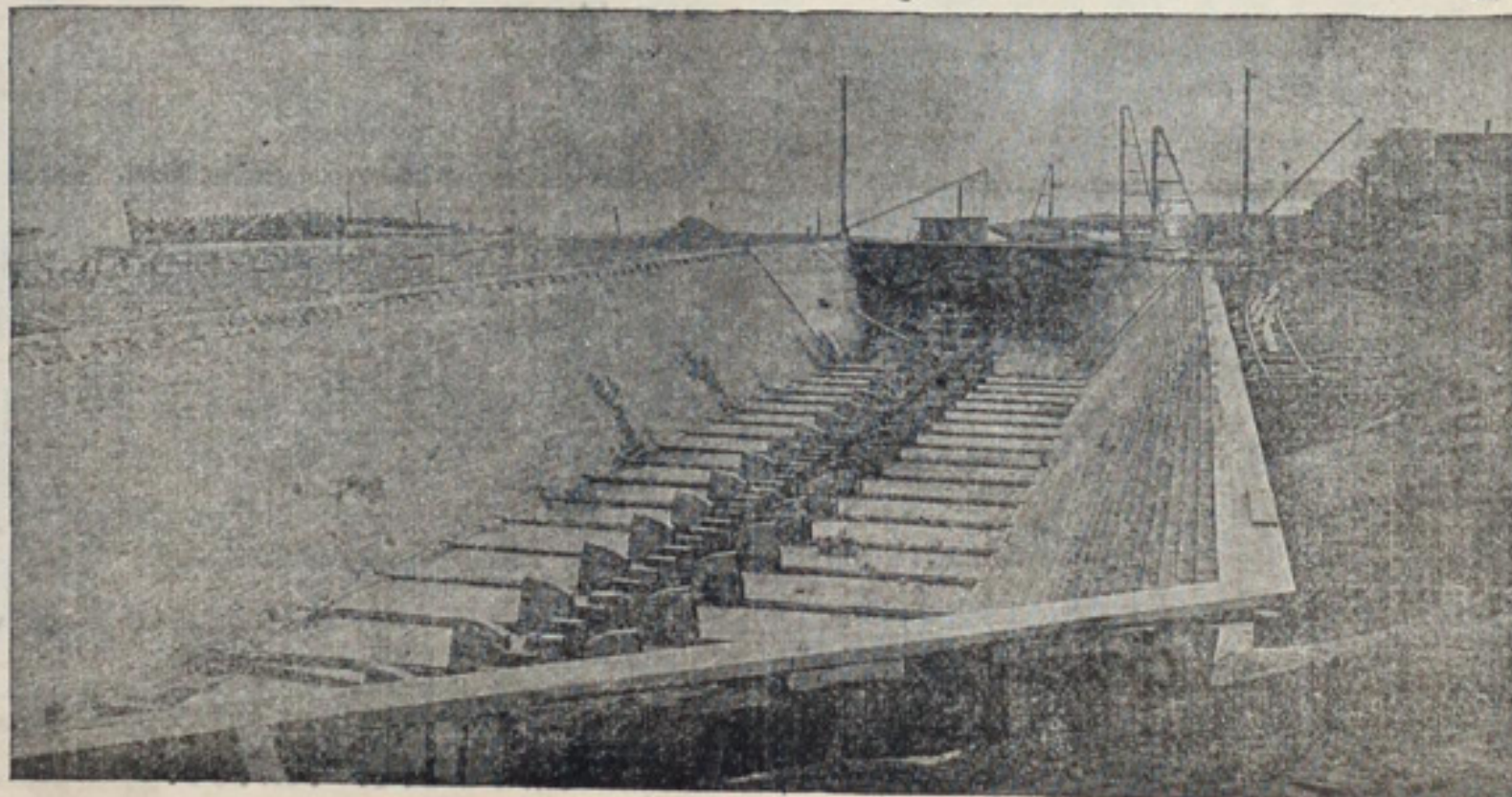
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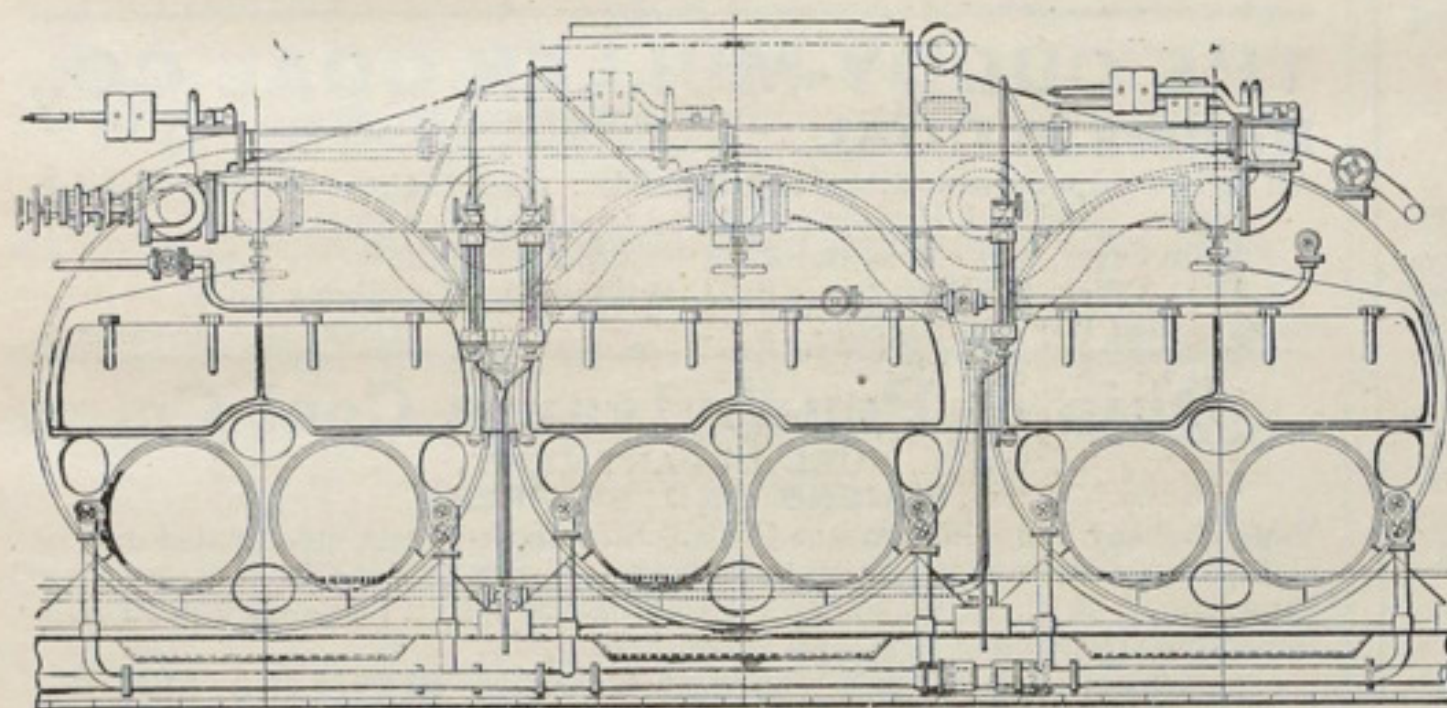
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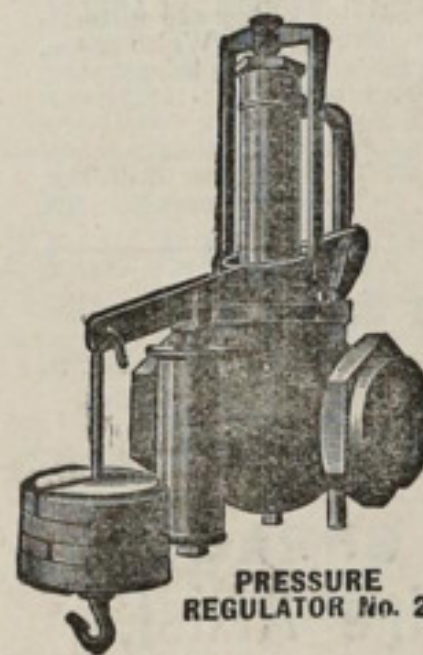
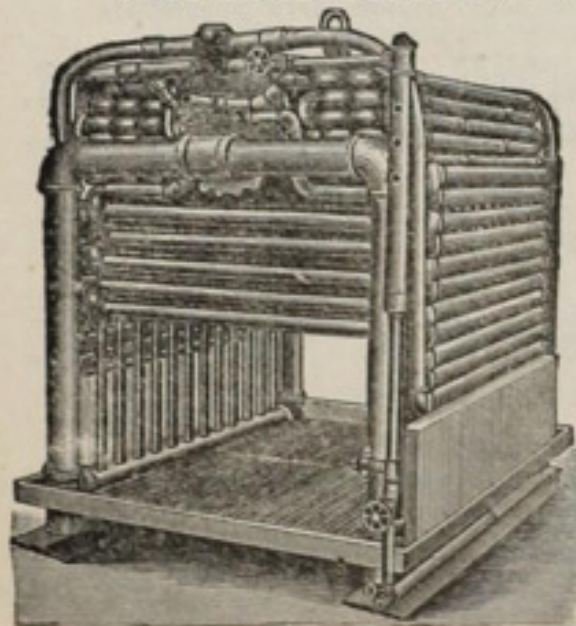
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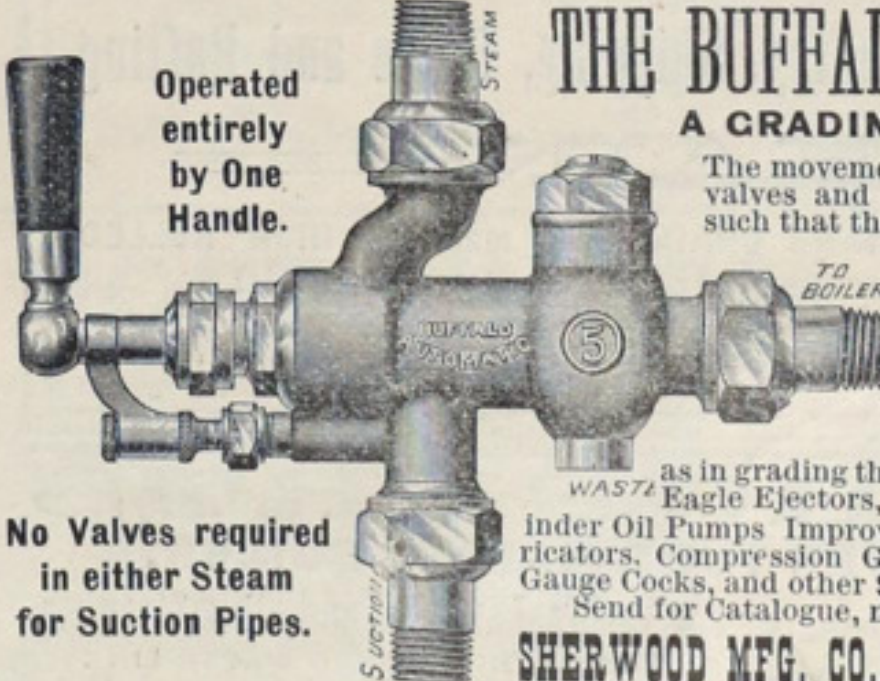
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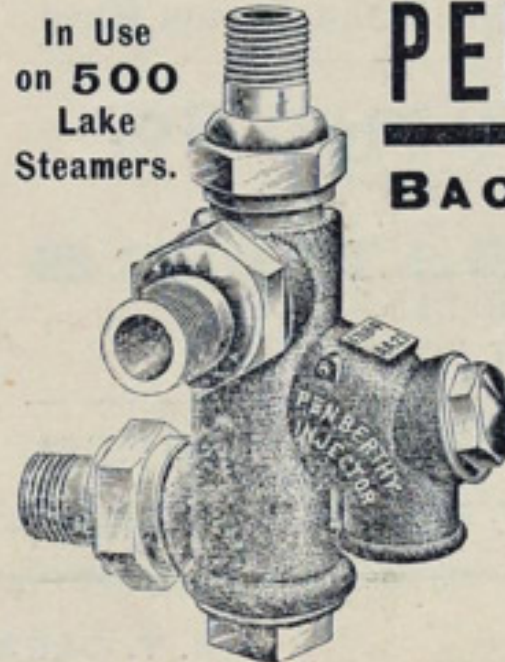
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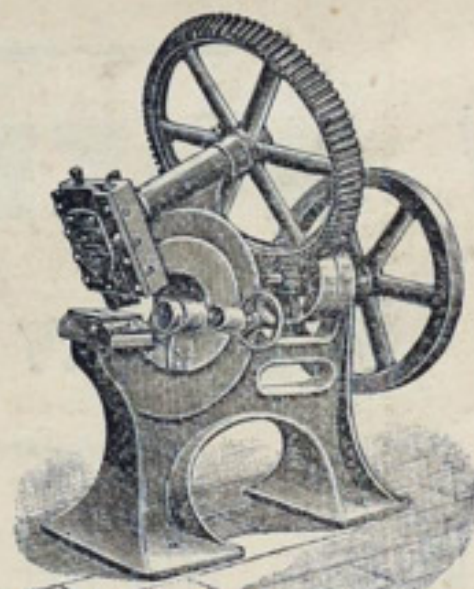
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